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USAID/OFDA Performance Baseline Data Report

Emergency response to life-threatening malnutrition in Jonglei, South Sudan

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1. Overview

Jonglei state, in which Uror County is situated, is one of 3 states with the majority of its population in crisis. This means that at least 1 in 5 HH face significant or extreme food consumption gaps. As a result, very high rates of malnutrition, excess mortality and loss of livelihoods have occurred and are expected during the current season. In Uror County more specifically, there is a vicious cycle between water borne diseases and malnutrition, only worsened by the most recent conflict that began in December 2013. Yuai, Padiiek, Motot, and Pathai payams are the most populated payams in the county and are IDP convergent points. However, access to basic services in these areas is poor, reflected in the high malnutrition rates and high rate of water borne disease, especially diarrhea.

Since December 2013, after violence spread from Juba into Jonglei, the nutrition conditions sharply declined, evident in Tearfund's ongoing Nutrition program and assessments, contributing to high morbidity rates. The number of admissions for Tearfund's OTP treatment in 6 feeding centers during the six months of hunger period between February and July 2014 skyrocketed. The increase as compared to the same time period last year was 112% (1,401 in 2013 as compared to 2,969 in 2014). Admissions data from the months August-December 2014 show a 178% increase (268 in 2013 as compared to 744 in 2014). Furthermore, the number of cases of SAM with complications almost tripled from the previous year (25 in 2013 to 64 in 2014), reflecting the dire situation of the host communities and IDPs as a result of the most recent conflict.

Tearfund had scaled down its WASH programming in Uror County and had concentrated in few of the Payams and some of them not covering some areas i.e. Part of Motot Payam was being covered with the

exception of Karam Boma, part of Pathai Payam was covered with the exception of Modit Boma, Pieri Payam, and Pulchuol Payam. Other locations in the county had not been covered by Tearfund. Other NGOs like LWF, PAH CARE international and CRS had covered them i.e. Padiak, Wickol (including Yuai) though much of the activity was Hygiene promotion though the coverage was to a small extent covering Hand Pump rehabilitation, Hygiene Promotion and WASH NFIs.

The current project was designed to reach the host community and the IDPs in Motot Payam (Karam), Pathai Payam (Modit), Padiak Payam and Wickol Payam (Including Yuai)

This Baseline survey report reflects data collected in two surveys:

- An end of project assessment survey for the 2014/2015 OFDA grant (which ended on August 31 2015), used to collate the baseline data for the Nutrition Sector. This assessment was conducted on November 9 – 15 2015 in the three OFDA supported locations of Karam, Modit and Dakriang.
- A separate baseline survey was conducted for the WASH sector from October 16 to November 5 2015. This Survey covered areas which had not been targeted by Tearfund and were believed to accommodate IDPs and Returnees that is Motot Payam (Karam Boma), Pathai Payam (Modit Boma), Padiak Payam and Wickol Payam(Including Yuai).

This report presents an assessment of the needs in this area and provides baseline data against which we will be able to monitor progress toward the project objectives, presenting findings of key IYCF practices and indicators, the status of level of knowledge of the community on hygiene and sanitation, the sanitation status of the locations that were targeted and as well the hygiene practices in community within the targeted areas.

2. Methodology

The Nutrition survey used Raosoft software to obtain the appropriate sample size. A two stage cluster sampling method was used in this assessment. A population of 51,917 gave a sample size of 382 households. The software randomly selected target villages/clusters from the list supplied for Karam, Modit and Dakriang, using the probability proportional to population size (PPS). The 2nd stage was completed at village level where a list of households with children aged 6-23 months was compiled with the help of village leaders. Target households were then randomly selected, giving all the households equal opportunity to be included. The household and IYCF questionnaire were administered in the selected households.

The population size that was used was 4,500 HHs (27,000 Beneficiaries considering average size of HH being 6) since one questionnaire was to be administered per household. Cluster sampling then simple random sampling was carried out to consider the payams and HHs respectively to enumerate.

Data entry and analysis was done using SPSS Version 20. The data collection was carried out by the enumerators from the first day of enumeration to the last day then they were returned for data entry.

The WASH Baseline survey was conducted using 2 stages of sampling. The first was Cluster sampling where the Payams targeted were selected out of the whole county. Then in those Payams, simple random sampling was used to determine the households that were sampled for the enumeration. This was carried out by WASH Extension workers who are employed by Tearfund after they were trained and pretested on the administration of the questionnaires.

The survey population (the total target population of Motot Payam (Karam), Pathai Payam (Modit), Padiak Payam and Wickol Payam, including Yuai). Sample Size calculation was determined using an online sample size calculator, www.raosoft.com . The population size was taken as 27,000 individuals (4,500 HHs), taking the margin of error as 5%, Confidence interval of 95% and response distribution of 50%. The sample size as a

result of the calculation was 355 HHs though enumeration was done for 366 HHs. Sampling was carried out in 18 Bomas and 148 villages in total. All Households in those villages had a chance of being selected to participate in the survey. The enumeration was carried out by Tearfund employed WASH Extension Workers who had been trained. Data that was collected included data on Water sources, hygiene practices and sanitation.

Data entry and analysis was done using SPSS Version 20. The data collection was carried out by the enumerators from the first day of enumeration to the last day then they were returned for data entry.

3. DISCUSSION OF RESULTS

In Uror County, there is a vicious cycle between water borne diseases and malnutrition, only worsened by the most recent conflict that began in December 2013. Yuai, Padiak, Motot, and Pathai payams are the most populated payams in the county and are IDP convergent points. As a direct result of the violence in Jonglei, as well as surrounding areas, displacement, broken markets and disrupted livelihoods, the food security has deteriorated drastically in Jonglei state. 33% of the population is severely food insecure compared to 8% in the previous year, and the proportion of the population in Jonglei with a poor consumption score increased to 23% from 6% in 2013. IDPs arrived without any supplies and rely on gifts from and other resident households. As a result, host communities supplies and coping mechanisms have been exhausted. The result is an increasing malnutrition crisis evident by the high GAM and SAM rates found. The declining nutrition situation in Uror County is exacerbated by a lack of access to basic services to treat and prevent malnutrition among women and children as well as inaccessibility to safe water, sanitation, and hygiene. The lack of access to clean water, the lack of knowledge of sanitation and poor hygiene practices all contribute to high rates of water borne disease, which further feeds into the cycle of malnutrition.

The communities of Karam, Modit and Dakriang have been especially affected by the ongoing food security crisis with around 90% of the respondents reporting having experienced one or more shocks over the past year. After closure of the road from Bor the entire community was severely affected by expensive food as most of the food items in the market are brought in from neighboring Ethiopia. Security incidences have had widespread impact on food security in the region. Inter clan fights have been ongoing as well as fighting between the government of South Sudan and the rebels. Other shocks are illustrated in the table below.

Shocks	Percentage (%)
Insecurity	52.9
Expensive food	70.1
Limited access and or movement	29.7
Livestock diseases	13.9
Floods	12.3
Human sickness	33.6
Delay of rains	18.8
Pest/crop diseases	20.0
Lack of water	33.9

In 2015, the WASH and Nutrition clusters identified the links between WASH and Nutrition in the national strategic response plans. In particular, the WASH cluster recognizes how children, who are most vulnerable to food insecurity, can be permanently damaged (e.g. stunting) as a result of malnutrition exacerbated by water borne (diarrheal) diseases a lack of sanitation and limited knowledge of safe hygiene practices. In the targeted area in Uror county, Tearfund has identified a low knowledge of safe hygiene practices, a high rate of open defecation, and weak water supply infrastructure among the communities affected most by the conflict, as reflected in the results of this baseline survey.

a. Demographic Information

Among the respondents that were interviewed, 71% were females while 29 were males. 91% had had no formal education whereas 2% had gone to secondary school level and 7% had gone to Primary school level. 82% of were members of the host community, 3% were returnees while 15% were IDPs.

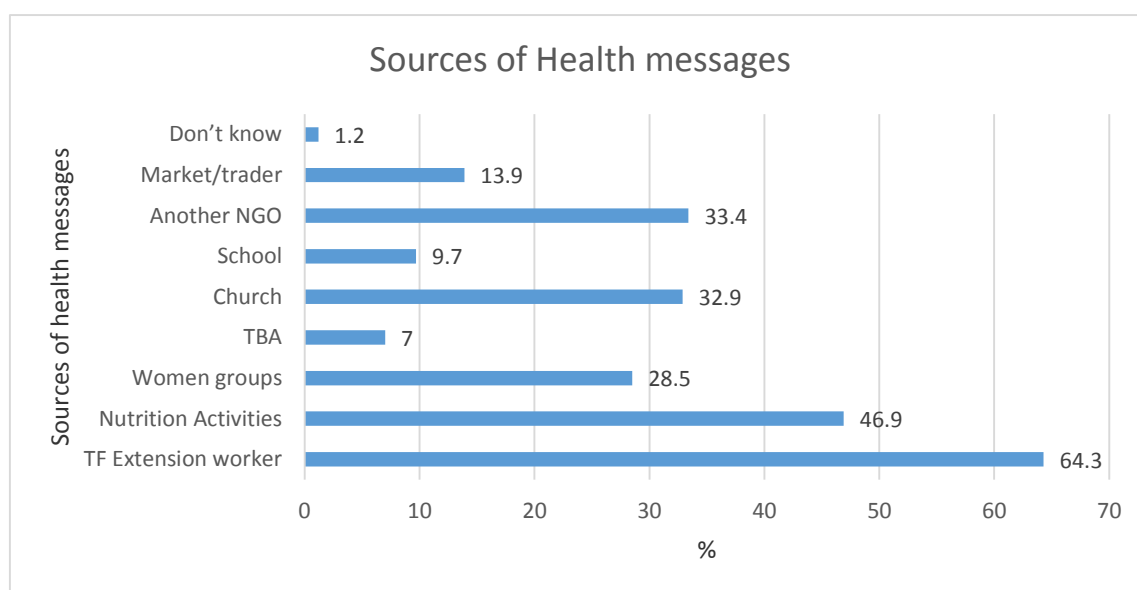
Total affected population:

<i>Payam</i>	<i>Men</i>	<i>Women</i>	<i>Boys</i>	<i>Girls</i>	<i>Total (IDPs)</i>
Motot	7,893	8,216	21,442	22,110	59,661 (15%)
Pathai	5,276	5,491	14,265	14,847	39,879 (15%)
Yuai	5,486	5,710	14,833	15,439	41,469 (15%)
Padiak	3,467	3,608	9,373	9,755	26,203 (15%)

b. SECTOR: Nutrition

The end of project survey from the previous OFDA funded project in the area revealed significant improvements in the target communities ability to access care MAM and SAM treatment centers, recovery rates improved (80%) and the number of mother support groups rise significantly (100 in three target areas). There were also significant improvements in the number of children being breastfed for longer periods of time. Improvement in the access to health messaging was also reported (as seen in the figure below).

Health messages during the course of the year were reported to have been heard by 66.6% of the respondents. The main sources of Health information are shown in the figure below.



Despite these gains, however, the needs remain high with only 3% of children (6-<24 mo.) receiving food in 4 food groups daily and only 12% of children introduced to semi solid or soft food at the appropriate time. The new project has added two sites for the management of MAM (Yuai and Padiak have been added) to improve coverage.

i. Sub-sector: Management of MAM

The table below provides a summary of baseline figures for each indicator.

Sub-sector Name: Management of MAM	Baseline	Target
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Indicator 1:	Number of sites managing MAM	3			5		
Indicator 2:	Number of people admitted to MAM services disaggregated by sex and age (0-11 months, 1-4 years, 5-14 years, 15-49 years, 50-60 years, and 60+ years)	Age	male	female	Age	male	female
		0-11 mo	0	0	0-11 mo	292	280
		1-4 yrs	0	0	1-4 yrs	2625	2523
		5-14 yrs	0	0	5-14 yrs	0	0
		15-49 yrs	0	0	15-49 yrs	0	0
		50-60 yrs	0		50-60 yrs		
		Total	0	0	Total	2917	2803
Indicator 3:	Number of health care providers and volunteers trained in the prevention and management of MAM, disaggregated by sex.	male		female		male	
		0		0		15	

ii. **Sub-sector: Management of SAM**

The table below provides a summary of baseline figures for each indicator.

Sub-sector Name: Management of SAM		Baseline			Target		
			male	female		male	female
Indicator 1:	Number of health care providers and volunteers trained in the prevention and management of SAM, disaggregated by sex and age (0-11 months, 1-4 years, 5-14 years, 15-49 years, 50-60 years, 60+ years)	0-11 mo	0	0	0-11 mo	0	0
		1-4 yrs	0	0	1-4 yrs	0	0
		5-14 yrs	0	0	5-14 yrs	0	0
		15-49 yrs	0	0	15-49 yrs	15	75
		50-60 yrs			50-60 yrs	0	0
		Total	0	0	Total	15	75
Indicator 2:	Number of sites established/rehabilitated for inpatient and outpatient care	3			5		
Indicator 3:	Number of people treated for SAM, disaggregated by sex and age (0-11 months, 1-4 years, 5-14 years, 15-49 years, 50-60 years, 60+ years)		male	female		male	female
		0-11 mo	0	0	0-11 mo	55	57
		1-4 yrs	0	0	1-4 yrs	497	517
		5-14 yrs	0	0	5-14 yrs	0	0
		15-49 yrs	0	0	15-49 yrs	0	0
		50-60 yrs	0	0	50-60 yrs	0	0
		Total	0	0	Total	552	574
Indicator 4:	Rates of admission, default, death, cure, relapse, non-response transfer, and length of stay.	Defaulter Rate		0	Defaulter Rate		< 15%
		Recovery Rate		0	Recovery Rate		>75%

		Admission Rate	0	Admission Rate	>50%
		Non-Response Rate	0	Non-Response Rate	<15%
		Length of Stay (days)	0	Length of Stay (days)	60

iii. Sub-sector: Infant and Young Child Feeding and Behavior Change

Infant and Young child feeding practices were initiated in Modit, Karam and Dakriang in June 2015. To date, 100 mother support groups have been set up (Karam 46, Modit 24 and Dakriang 30). The support groups carry out learning sessions in the community with the support of IYCF counsellors and IYCF facilitators. 61.3% of the respondents revealed that there was a support group in their villages while 60.8% of the respondents were actual members of a support group.

The table below provides a summary of baseline figures for each indicator.

Sub-sector Name: Infant and Young Child Feeding and Behavior Change		Baseline			Target		
Indicator 1:	Number and percentage of infants 0-<6 months of age who are exclusively breastfed	40% (830 of 2,077)			>50% (1031)		
Indicator 2:	Number and percentage of children 6-<24 months of age who receive foods daily from 4 or more food groups (to achieve minimum dietary diversity); and 3. Number of people receiving behavior change interventions, by sex and age (0-11 months, 1-4 years, 5-14 years, 15-49 years, 50-60 years, and 60+ years)	3% (102 of 3413)			10% (314)		
Indicator 3:	Number of people receiving behavior change interventions, by sex and age (0-11 months, 1-4 years, 5-14 years, 15-49 years, 50-60 years, 60+ years)		male	female		male	female
		0-11 mo	0	0	0-11 mo	0	0
		1-4 yrs	0	0	1-4 yrs	0	0
		5-14 yrs	0	0	5-14 yrs	0	0
		15-49 yrs	0	0	15-49 yrs	412	3710
		50-60 yrs	0	0	50-60 yrs	0	0
		Total	0	0	Total	412	3710

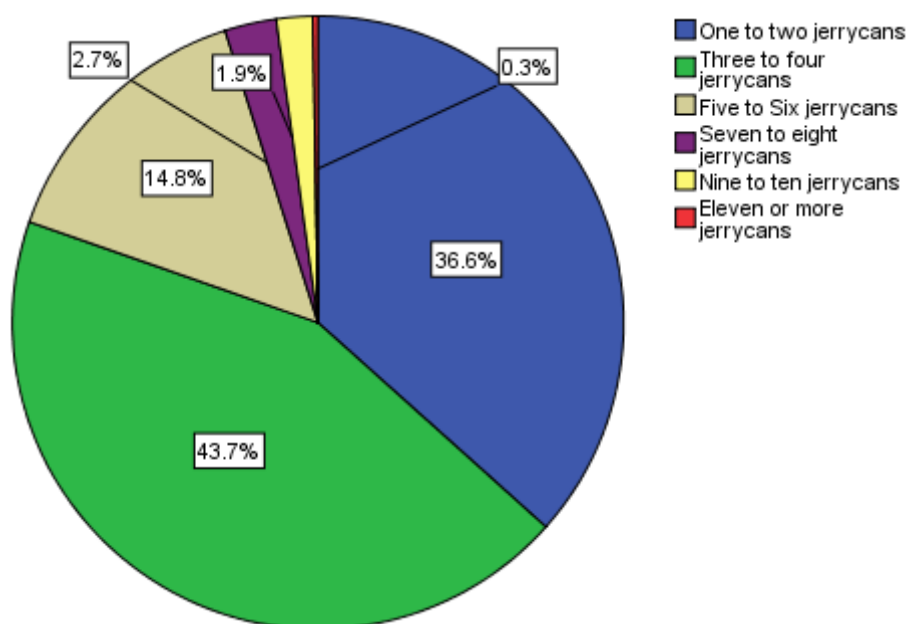
c. SECTOR: WASH

The survey results show that needs in the WASH sector remain high. 29% of the targeted population use unsafe water sources for drinking. 83% of the target population uses less than the recommended amount of water per day by the SPHERE standards i.e. 15 litres per person per day. Only 22% of the sampled population used both clean water and soap for handwashing. These factors contribute significantly to the prevalence of malnutrition in the target areas.

i. Sub-sector: Water Supply Infrastructure

Most of the respondents obtained their HH drinking water from safe water sources, 71% (boreholes) whereas 29% drew their household water for drinking from unsafe water sources like the ponds, rivers, and swamps that surrounded their households.

It takes on average 10 to 30 minutes for the closest people (35%) to walk to the water source to fetch drinking water whatever source while the furthest people (1%) take 2 to 3 hours. 25% of respondents reported that they take less than 30 minutes to line up and wait for a 20 liter jerry can to fill up during the rainy season as compared to 20% who reported that they take less than 30 minutes. The quantities of water collected per household varied from family to family. The figure below shows the variation in the number of 20 liter jerry cans that are collected per day.



The figure above shows that only 17% of the sampled population used more than 15 liters per person per day. 83% of them, use below the expected amount of water.

81% of the sampled households, also fetched water from other sources which was used other uses like washing of clothes, washing utensils, washing hands and bathing, brewing alcohol, smearing and mudding houses but also for drinking. Of those who collected water from other sources, some treated the water in various ways as shown in the table below:

Water treatment methods used to make unsafe water safe for consumption		Count	%
Use Chlorine to treat water collected from other unsafe sources	Yes	40	19%
	No	176	81%
Boil water from other unsafe water sources	Yes	52	24%
	No	164	76%
Filter water from unsafe water sources	Yes	177	81%
	No	41	19%
Use Ultra Violet sun rays to treat water from unsafe water sources	Yes	0	0%
	No	218	100%

82% of those surveyed used the same water collection containers to collect water from both safe and unsafe water sources where as 18% had different containers dedicated for the different water sources. Different households considered various methods of water storage and these as shown below.

How water is stored in the households

		Count	%
Store drinking water in a separate pot with a cover	Yes	54	15%
	No	312	85%
Store drinking water in a separate jerrycan with a cover	Yes	75	20%
	No	291	80%
Store in the same collecting container with a cover	Yes	166	45%
	No	200	55%
Store drinking water in a separate pot without cover	Yes	79	22%
	No	287	78%
Store drinking water in a separate jerrycan without cover	Yes	92	25%
	No	274	75%
Store in the same collecting container without cover	Yes	60	16%
	No	306	84%

Among the population that was sampled, the results showed that 77% had an idea of how water gets contaminated as compared to the 23% who had no idea.

The current action aims to increase access to safe water sources for IDPs and host communities. Some of the key outputs will include: 20 Boreholes rehabilitated and tested for water quality, 20 Water Management Committees supported and water Safety Plans developed by each WMC Committee, 9 hand pump mechanics trained and equipped.

The table below provides a summary of baseline figures for each indicator.

Sub-sector Name: Water Supply Infrastructure		Baseline	Target
Indicator 1:	Number of people directly benefitting from the water supply infrastructure program	0	27,000
Indicator 2:	# Test results with 0 fecal coliforms per 100ml sample	0	20
Indicator 3:	# Water points which are actively utilizing their Water Safety Plan.	0	20

Though most of the respondents admitted to fetching their water for drinking from the borehole, the 29% who access water from unsafe water sources for their drinking are at a very high risk of acquiring water borne illnesses from the water they drink. It was also noted that people spent more time lining up to fetch a single jerrycan of water at the water source during the dry season as compared to the rainy season. This is majorly because the temporary sources of water during the rainy season like the ponds and pools of water, are all dried up and the main source of water are the boreholes so everyone gets there to collect water. SPHERE standards recommend the daily minimum amount of water that can be used per person per day as 15 liters per person per day. The survey discovered that 83% of the sampled population used water per person per day that was below the recommended SPHERE standard. This comes either to population size increase, few water infrastructure or dilapidated water sources that have become inefficient due to age. Meanwhile a small Percentage of those that collected water from unsafe water sources treated it to make it safe. Water storage was generally poor with most of the populations not storing their drinking water safely.

ii. Sub-sector: Hygiene Promotion

Among the respondents sampled, 2% had heard **Hygiene promotion** messages in the past month, 12% of them had heard hygiene promotion messages this year, 2% could not remember when, 33% of them had heard last year while 52% of them had never attended any WASH hygiene messages. Among those that have ever heard of hygiene messages, some of the information that they were able to articulate included, covering

food after cooking it, use of water after treating it, washing water collection and storage containers, washing hands after doing dirty work, washing hands before eating, washing hands before handling food or water, cleaning compound, filtering water, covering water storage container, cleaning the homes, keeping their bodies clean, digging latrine, washing utensils and hanging them on a drying rack, washing clothes, washing hands with soap and clean water, washing children's faces in the morning, proper disposal of solid waste, storage of food in clean containers and treatment of water from ponds with chlorine.

The **latrine coverage** is still very low in the target area and hence more sensitization needs to be done to ensure that the latrine coverage is embraced by most of the population in the target locations. The latrine coverage of the sample area was found to be at 18%, that is covering Motot Payam (Karam Boma), Pathai Payam (Modit Boma), Wickol Payam (Including Yuai) and Padiak Payam. On the issue of children's feces handling, the respondents had different approaches to handling the children's feces as culturally most of the population regard children's feces as harmless. Children's feces handling is treated as less of a threat according to the results. 29% of the respondents often threw the feces in a pit. These are pits that are created as a result of digging out soil to mud a house structure hence it is still left exposed

Handwashing is considered the single most effective disease prevention hygiene practice. Given that only 10% of the population that was sampled had a hand washing facility near the latrine, then it is most likely that most of the sampled population did not practice handwashing after defecation which poses them with a great risk of acquiring fecal oral illnesses. 37% of the population sampled knew when to wash hands during critical times. And still among the sampled population, only 22% used clean water with soap or ash to wash their hands during the critical times.

Among the sampled population, 77.6% of the respondents had heard of **water borne diseases** whereas 22.4% of them had not. Among those that knew about water borne diseases or water related diseases, the knowledge on at least any of those diseases varied from person to person among the respondents that were sampled. Most of the respondents just knew about diarrhea, 56% whereas some of them had knowledge about intestinal worms, 64% while others knew about malaria, 36%. Others had knowledge on Hepatitis E, dysentery; Typhoid and other illnesses. When asked about the definition of diarrhea, not all respondents were able to define diarrhea correctly as passing 3 or more watery stools within 24 hours.

65% of the sampled population had an idea of the cause of diarrhea being eating or drinking contaminated food or water respectively while 6% of the population had no idea of what causes diarrhea while 3% attribute the cause of diarrhea to be God. Respondents had different means of preventing the diarrhea. 93% did something about it whereas 7% completely did nothing when they or a member of the family had diarrhea.

On finding out about the perception of whether children's feces caused diarrhea, 18% said no, whereas 82% said yes. Meanwhile 75% of those interviewed admitted to having had at least one diarrhea case in the household in the past one month. On the perception as to whether diarrhea was a problem to worry about or not, 95% said yes. Among those that admitted to diarrhea being a problem to worry about, 77% of the respondents believed that it can cause death, 61% believed that it weakens people, 30% believed that it causes loss in work time, 28% believed that it prevents children from going to school and 14% believed that it poses one with health risks. Some remedies were carried out by the households that had diarrheal cases. That was done by 78% of the sampled population whereas 22% of them did not do anything when someone in the household got sick from diarrhea. Other remedies that were carried out by the households that were sampled are as illustrated below in the table.

Most of the households from the sampled households disposed of their waste by scattering it in their gardens, i.e. 45% whereas the least practiced method of handling solid waste is leaving the waste to dry and burning it, i.e. 21%. This shows that much of the waste is used as manure in the gardens or farms.

The lack of hygiene knowledge in the target communities places target beneficiaries at high risk of outbreaks of hygiene related diseases which emphasizes the need for hygiene promotion activities in these communities. For example, effective handwashing during the critical times is the single cheapest and most effective way to prevent infection with diarrheal diseases. A good proportion of the sampled population had knowledge about water borne/related illnesses at different levels. This is mainly because they have suffered from them or have seen people who have suffered from them that are close to them. Most of the respondent tried to define what diarrhea was, 47% while 16% had knowledge on what diarrhea actually was and 37% had no complete knowledge of what diarrhea was. However, very few respondents actually treated diarrhea appropriately.

About 52% of the sampled households have never attended a single hygiene promotion session whether through NGOs, or through radio or television. This implies that some of them that know about what causes diarrhea must have been acquired through either peer to peer sharing at the village level hence secondary information.

Sub-sector Name: Hygiene Promotion		Baseline	Target
Indicator 1:	Number of people receiving direct hygiene promotion (excluding mass media campaigns and without double-counting).	0	12,600
Indicator 2:	# of village Water User Committees active at least 3 months after training	0	210
Indicator 3:	# of water points that are clean and protected from contamination	0	30
Indicator 4:	# of respondents by sex who know 3 of 5 critical times to wash hands	15487	TBD
Indicator 5:	# of households who store their drinking water safely in clean containers	14650	TBD

CONCLUSION

From this baseline study, we can make the following recommendations:

- Strengthen the existing nutrition programming and expand outreach activities to cover areas identified with coverage gaps (Weckol, Payai)
- Build capacity on the recently conducted IYCF ToT to scale up IYCF activities and reach the community with relevant IYCF messages geared towards adopting a positive behavior change toward young infant care.
- Link IYCF activities being carried out in communities to feeding centers and Health facilities (Curative and Vaccinations)
- Promote close integration of Nutrition activities with health and WASH activities (Tear fund, CHD and Health partners)
- Set up and/or maintain a strong Nutrition surveillance mechanism that is able to identify and support locations/communities with deteriorating nutrition status.
- Advocate for implementation of a food security intervention alongside Nutrition and WASH interventions in Uror County. To support set up an agricultural extension team and carry out seeds and tools distribution
- Advocate for set up of a stabilization center in Uror County through the CHD and Health partners.
- Effective Hygiene promotion in the villages, especially those that have not been reached with hygiene promotion messages before.

- Rehabilitation of the available safe water source that yield less water due to less aging of the pump parts so as to restore them to their original state.
- Conduct household level hygiene promotion to improve on the knowledge that community members have on some of the issues regarding water, sanitation and hygiene.
- Integrate with the nutrition structures so as to influence mothers who take care of the children since diarrhoeal diseases affect nutrition intake and eventually growth of young children.
- Set up Water Management Committees to educate the community members on the best way to handle and store water when it is taken home

These recommendations have been taken into account in planning activities under the current Action and progress will be regularly monitored and reported against the baseline data contained in this report on a quarterly basis.